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### **ABSTRACT**

This invention relates to a three-stream atomizing nozzle for use with a rewet shower. The nozzle has an air stream divider that separates the atomizing air from the source into three streams. The first stream is a straight air stream staying closest to and around the atomized water jet. The second stream is a swirl running around the first The third stream is also a straight straight stream. stream that wraps around the first straight stream and the second swirl. The nozzle also has a mixing chamber which the three air streams are mixed together for the atomizing purpose. The nozzle can from the combination of the three air streams produce fine water droplets that are suitable for a paper rewet shower and more importantly creates a tailorable water mass profile. The mass profile can be tailored into a shape that is close to a square shape which is ideal for rewet showers as a square profile creates minimal coupling between adjacent zones.

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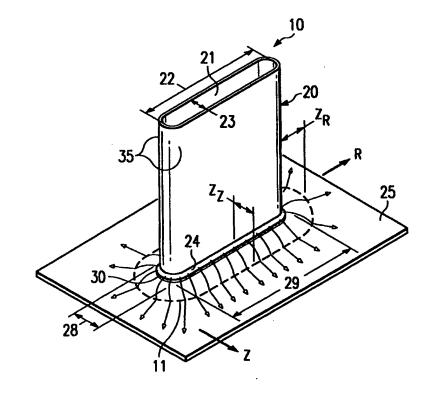
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## (54) Title: SLOT JET REATTACHMENT NOZZLE AND METHOD OF OPERATION

#### (57) Abstract

The invention comprises a slot (20) operable to direct a substance through the slot (20), the slot (20) having a maximum inner width (23) and a maximum inner length (22), the ratio of the maximum inner length (22) to the maximum inner width (23) being greater than two. The invention further comprises a base (30) coupled to the slot (20), the base (30) having a width (28) greater than the maximum inner width (23) and a length (29) greater than the maximum inner length (22) to redirect the substance through the slot (20) at an angle. According to another embodiment of the invention, a system for transferring a mass over an impingement surface (25) comprises a plurality of slot jet reattachment nozzles (10) operable to direct the substance over the impingement surface (25), the plurality of slot jet reattachment nozzles (10) located proximate to the impingement surface (25).



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